

Abstract of the Disclosure

Disclosed is a method of fabricating a MEMS device by means of surface micromachining without leaving any stiction or residues by etching silicon oxide of a sacrificial layer, which is an intermediate layer between a substrate and a microstructure, rather than by etching silicon oxide of a semiconductor device. The method according to the invention includes the steps of supplying alcohol vapor bubbled with anhydrous HF, maintaining a temperature of the supplying device and a moving path of the anhydrous HF and the alcohol to be higher than a boiling point of the alcohol, performing a vapor etching by controlling a temperature and a pressure to be within the vapor region of a phase equilibrium diagram of water, and removing silicon oxide of a sacrificial layer on a lower portion of the microstructure.